and remained satisfied with the amount of information presented (figures 3 and 4). Unfortunately, rounds frequently exceeded the allotted time, increasing from 37% to 50% (N=7, 6, 10) (figure 5).

Conclusions Hybridization of FCR to include formal presentations resulted in 55% more residents agreeing that FCR provided the best educational experience, while preserving family satisfaction and comprehension. Results may be generalizable to similarly sized residency programs. Future interventions will target barriers and negatively impacted educational activities identified upon re-evaluation of the new FCR structure.

5 REDUCING ACUTE HOSPITALIZATION LENGTH OF STAY AFTER TOTAL KNEE ARTHROPLASTY: A QUALITY IMPROVEMENT STUDY

Yehoshua Gleicher, Naveed Siddiqui, Yusuke Mazda, David Backstein, John Matelski, Jesse Wolfstadt, Sinai Health System, Canada; University Health Network, Canada; Mount Sinai Hospital, University of Toronto, Canada

Background The introduction of bundled funding for total knee arthroplasty (TKA) has motivated hospitals to improve the quality of care while minimizing costs. We identified LOS and the percentage of patients discharged to inpatient rehabilitation for primary TKA patients as potential targets for reducing costs, improving the quality of patient care, and ultimately improving our performance within the bundled payment model.

Objectives The aim of our quality improvement project was to reduce the acute hospitalization length of stay (LOS) to less than two days and decrease the percentage of TKA patients discharged to inpatient rehabilitation using an enhanced recovery after surgery (ERAS) bundle.

Methods This study used a before-and-after design. The pre-intervention period was January – December 2017 and the post-intervention period was January 2018 – August 2019. A

Abstracts
root (figure 1) cause analysis (RCA) was performed by a multidisciplinary team to identify barriers for rapid recovery and discharge. Four new interventions were chosen as part of an improvement bundle based on existing local practices, literature review, and feasibility analysis: 1) perioperative placement of peripheral nerve block; 2) prophylactic antiemetic medication; 3) avoidance of routine pre-operative urinary catheterization; and 4) pre-operative patient education regarding surgical recovery.

**Results**

The pre- and post-intervention groups included 232 and 383 patients, respectively (table 1). Mean LOS decreased from 2.82 to 2.13 days (P<0.001) (table 2). The need for inpatient rehabilitation decreased by 10% (p=0.002). Mean 24-hour oral morphine consumption decreased by 37%

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**Abstract 5 Figure 1**  Fishbone diagram to identify root causes for increased length of stay

- a. Impact of adductor canal block on 24 hour opioid consumption
- b. Impact of IV dexamethasone on PONV
- c. Rates of bladder catheterization
- d. Rates of 30-day emergency department visits

**Abstract 5 Figure 2**  Run charts
The percentage of patients experiencing moderate-to-severe pain and postoperative nausea and vomiting within the first 24-hours decreased by 25% and 15%, respectively (p<0.001). 30-day emergency department visits following discharge decreased by 5% (p=0.030) (table 3, figures 2 and 3).

Conclusions

Significant improvements in the recovery of patients after TKA were achieved by performing a RCA and implementing a multi-disciplinary, patient-centered ERAS bundle.


**Abstract 5 Table 1** Characteristics of patients undergoing TKA

<table>
<thead>
<tr>
<th></th>
<th>Pre-ERAS Group</th>
<th>ERAS bundle</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>232</td>
<td>383</td>
<td></td>
</tr>
<tr>
<td>Age, year (mean, (SD))</td>
<td>66.1 (10.1)</td>
<td>66.5 (9.9)</td>
<td>0.466</td>
</tr>
<tr>
<td>Female, n</td>
<td>148 (63.8%)</td>
<td>228 (59.5%)</td>
<td>0.334</td>
</tr>
<tr>
<td>ASA classification</td>
<td></td>
<td></td>
<td>0.090</td>
</tr>
<tr>
<td>ASA I</td>
<td>4 (1.7%)</td>
<td>5 (1.3%)</td>
<td></td>
</tr>
<tr>
<td>ASA II</td>
<td>97 (41.8%)</td>
<td>123 (32.1%)</td>
<td></td>
</tr>
<tr>
<td>ASA III</td>
<td>126 (54.4%)</td>
<td>243 (63.4%)</td>
<td></td>
</tr>
<tr>
<td>BMI, kg/m² (mean, (SD))</td>
<td>31.0 (7.0)</td>
<td>32.45 (7.83)</td>
<td>0.023</td>
</tr>
<tr>
<td>Neuraxial anaesthetic</td>
<td>199 (85.8%)</td>
<td>329 (85.9%)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

TKA = total knee arthroplasty, ERAS = enhanced recovery after surgery, ASA = American Society of Anesthesiologists, BMI = body mass index.

(p<0.001). The percentage of patients experiencing moderate-to-severe pain and postoperative nausea and vomiting within the first 24-hours decreased by 25% and 15%, respectively (p<0.001). 30-day emergency department visits following discharge decreased by 5% (p=0.030) (table 3, figures 2 and 3).

Conclusions

Significant improvements in the recovery of patients after TKA were achieved by performing a RCA and implementing a multi-disciplinary, patient-centered ERAS bundle.

**Abstract 5 Table 2** Interrupted time series analysis (ITS) used to model monthly LOS and percent discharged to inpatient rehabilitation

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pre-ERAS Group</th>
<th>ERAS bundle</th>
<th>Difference</th>
<th>Wald p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS (days)</td>
<td>2.60</td>
<td>1.81</td>
<td>-0.79</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>(2.30, 2.90)</td>
<td>(1.59, 2.03)</td>
<td>[-1.16, -0.42]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOS &lt; 2 Days</td>
<td>18.3%</td>
<td>69.3%</td>
<td>50.9%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>(9.0, 27.8)</td>
<td>(62.4, 76.1)</td>
<td>(39.3, 62.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge to Rehabilitation</td>
<td>19.9%</td>
<td>8.2%</td>
<td>-11.7%</td>
<td>0.045</td>
</tr>
<tr>
<td>(10.7, 29.1)</td>
<td>(1.4, 14.9)</td>
<td>[-23.1, -0.3]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LOS = length of stay

(p<0.001). The percentage of patients experiencing moderate-to-severe pain and postoperative nausea and vomiting within the first 24-hours decreased by 25% and 15%, respectively (p<0.001). 30-day emergency department visits following discharge decreased by 5% (p=0.030) (table 3, figures 2 and 3).

Conclusions

Significant improvements in the recovery of patients after TKA were achieved by performing a RCA and implementing a multi-disciplinary, patient-centered ERAS bundle.

## 6 Reducing Unnecessary Patient Isolation on General Medicine Units

1. Joseph Carson, 2Mary-Margaret Taabazuing, 2Cody Sider, 2Michael Payne, 2Yasmin Behzadian, 3Alice Newman, 3Elaine Hunter Gutierrez, 3Linda Elliot, 3Brittany Devoe. 1Western University; London Rheumatology, Canada; 2Western University; London Health Sciences Centre, Canada; 3London Health Sciences Centre, Canada

**Background**

Droplet+contact (DC) precautions are used to prevent the spread of acute respiratory infections. Clinicians at London Health Sciences Centre, an academic tertiary care organization in Ontario, Canada, have reported that many patients remain isolated longer than necessary. Research suggests that prolonged isolation may negatively impact patient outcomes, experience, and costs.

**Objectives**

Reduce unnecessary DC precautions on general medicine units by 30% by March 31, 2020.

**Methods**

1. Identify unnecessary DC precautions using audit Cohort.
2. Leverage change management to implement the RCA.
3. Implement the ERAS bundle.

**Results**

- **LOS**: 2.60 (2.30, 2.90) vs 1.81 (1.59, 2.03), p < 0.001.
- **LOS < 2 Days**: 18.3% (9.0, 27.8) vs 69.3% (62.4, 76.1), p < 0.001.
- **Discharge to Rehabilitation**: 19.9% (10.7, 29.1) vs 8.2% (1.4, 14.9), p = 0.045.

ERAS = enhanced recovery after surgery, LOS = length of stay, VRS = verbal rating scale, IV = intravenous, ED = emergency department